

REMARKS

In response to the Office Action dated 21 December 2001, claims 26-46 have been amended. No new matter has been added. Reexamination and reconsideration of the claims as requested is respectfully requested.

In paragraph 1 on page 2 of the Office Action, claims 26-30, 33-46 were rejected under 35 U.S.C. §102 (e) as being anticipated by Jokiahho et al. In paragraph 2 on page 3 of the Office Action, dependent claims 31-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jokiahho et al. in view of Stewart.

Applicants respectfully traverse these rejections, but in the interest of prosecution have amended the claims to more particularly distinguish Applicants' invention. Further, Applicants have amended "service" to "reporting" in claims 26, 44, 45 and 46, which were inadvertently changed from the originally filed application. Applicants respectfully submit that the cited references, taken alone or in combination, do not disclose, teach or suggest the invention. Applicants respectfully submit that there are patentable differences between the cited references and Applicants' invention as recited in the claims. Applicants' invention differs from the cited references in at least the following respects.

Applicants' invention discloses three different areas in which a mobile station may be tracked: a location area, a reporting area, and a service area. The location area is used primarily by the radio access network (RAN) to track the mobile for radio resource purposes, such for the routing of incoming calls (page 1, lines 22 to 27). This information is maintained at the RAN and not passed onto the core network (CN). There is also a second area, the service area, which is defined by the CN. The service area is needed

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by the CN for service management, such as billing and authentication. The service area may include the reporting area. Typically, but not necessarily, the reporting area will be the same as the service area and comprises a plurality of location areas. The CN informs the RAN of this reporting area. When a mobile moves around, the RAN receives updates on changes in the location area, but will only report to the CN changes in the reporting area as defined by the CN, and not for all location area changes. Descriptions of these different areas can be found on page 3, lines 9 to 27, and illustrated in Figure 3. This method helps reduce unnecessary signaling between the mobile and the RAN, and the RAN and the CN.

Jokiaho fails to disclose at least determining in the core network a reporting area comprising at least one location area. Also, Jokiaho fails to disclose informing the radio access network by the core network of the reporting area determined. Further, Jokiaho fails to disclose determining by the radio access network based on the location update whether or not the mobile station has moved out of the reporting area. Further yet, Jokiaho fails to disclose sending by the radio access network to the core network a report if the mobile station has moved out of the reporting area.

Rather, Jokiaho teaches a method of updating location information based on a location area, thus, optimizing location signaling between a mobile and a data service center for packet data transmission. The data packets defined contain additional identifiers that locate the mobile, thereby reducing the need for any additional signaling for location updates during packet data transmission. This results in a location area that is different for a packet based service compared to normal, or circuit based, services.

Jokiaho does not disclose a reporting area, or a service area that is made up of reporting areas. Jokiaho discloses a location area, which is different than the service or the reporting area. Applicants' notes that the idea of the location area in Jokiaho can vary according to the (data) service (col. 7 lines 8 to 16), but this varying location area still does not constitute a reporting area or service area as recited in Applicants' claims. Thus, in Jokiaho, it is still the location area that is varied according to a service. Jokiaho's device would still result in unoptimized usage of the radio or I_u interface, which in Jokiaho's device is between the mobile and an Agent, and between the Agent and the WAN.

The reporting area is by its very nature unrelated to the optimal area for tracking a mobile station, the location area. If the RAN tracks the mobile to the reporting area, the resulting paging is significantly increased. However, if the RAN tracks to the location area, and reports to the CN all changes in location area, there is also an excess signaling load on the I_u interface, and processing at both the RAN and CN. Thus, this is why the reporting area feature is important, and the way in which it is defined and signaled to the RAN from the CN, as defined in Applicants' claims.

Furthermore, Applicants respectfully submit that Jokiaho has already been acknowledged in the background of Applicants' invention (page 2, lines 3 to 29), together with its associated problems. Applicants' invention, as defined by the claims and described in the detailed description, is aimed at overcoming these problems, and provides clear advantage over Jokiaho by solving these problems.

Stewart fails to remedy the deficiencies of Jokiaho. Stewart fails to disclose at least determining in the core network a reporting area comprising at least one location

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area. Also, Stewart fails to disclose informing the radio access network by the core network of the reporting area determined. Further, Stewart fails to disclose determining by the radio access network based on the location update whether or not the mobile station has moved out of the reporting area. Further yet, Stewart fails to disclose sending by the radio access network to the core network a report if the mobile station has moved out of the reporting area.

Rather, Stewart merely discloses access points in known geological locations to detect the presence of a mobile unit. When one of the access points detects the presence of the mobile unit, it sends a signal to the network indicating the location of the mobile unit and the information requested by the mobile unit. Stewart does not even consider a reporting area as disclosed in Applicants' claims.

Therefore, in view of the above remarks, Applicants' independent claims 26 and 44-46 are patentable over Jokiaho and Stewart.

Because claims 27-43, which depend directly or indirectly from claims 26, include the features recited in the independent claims as well as additional features, Applicants respectfully submit that claims 27-43 are also patentably distinct over the cited references. Nevertheless, Applicants are not conceding the correctness of the Examiner's rejection with respect to such dependent claims and reserves the right to make additional arguments if necessary.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

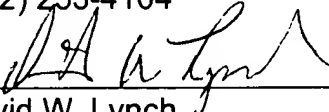
Respectfully submitted,

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